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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/866,252	05/24/2001	Jonathan W. Haines	8035145	4581

36521 7590 02/24/2005

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EXAMINER

NGUYEN, THAN VINH

ART UNIT	PAPER NUMBER
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2187

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/866,252

Applicant(s)

HAINES ET AL.

Examiner

Than Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10/20/03, 4/23/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-13 is/are allowed.
- 6) ☒ Claim(s) 14 is/are rejected.
- 7) ☒ Claim(s) 15-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This is a response to the amendment, filed 10/20/03 and 4/23/04.
2. Claims 1-20 are pending.

#### ***Oath/Declaration***

3. The oath or declaration is defective. A new oath or declaration in compliance with 37 CAR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It was not executed in accordance with either 37 CAR 1.66 or 1.68.

The signature of William Herz is missing on the declaration.

#### ***Response to Argument***

4. Applicant's arguments filed 10/20/03 have been fully considered but they are not persuasive. As to claim 14, Applicant argues that the Examiner did not properly address the means plus function claim. Applicant argues that the environment of the invention has to be considered as a limitation. Applicant is incorrect. According to MPEP 2105, "Where means plus function language is used to define the characteristics of a machine or manufacture invention, claim limitations must be interpreted to read on only the structures or materials disclosed in the specification and "equivalents thereof". There is no requirement for considering the environment of the invention, nor was there any claim to an environment of the invention (in the claim language). The Examiner has addressed each individual limitations and map that to the teachings of the prior art that are equivalents of the claimed means plus function limitations. It should be noted that Applicant has not shown/demonstrated the correspondences

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of the means plus function limitations or what limitations are not met by the cited prior art.

Since the prior art of record teaches the limitations as claimed and Applicant has not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made, the Examiner maintains the previous rejection to claim 14.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 14 is rejected under 35 U.S.C. 102(b) as being anticipated by Shaver, Jr. et al (US 5,276,662), hereinafter as Shaver .

As to claim 14:

7. Shaver teaches a data storage with improved data transfer management. Shaver teaches a disk drive system comprising:

a signal-bearing media means for storing data (media 24);

a code memory means coupled to a read/write controller means for controlling the reading/writing of data to the signal-bearing media (disc interface controller 56);

means for reading and writing data to the signal-bearing media (read/write circuit 58);

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a processor means coupled to the code memory and the read/write controller comprising a program for managing memory segments wherein the memory segments are sized on data rate parameters (host 22; abstract; 2/15-25,50-60; 7/1-43).

*Allowable Subject Matter*

8. Claims 1-13 are allowed for reasons cited in the previous office action and reiterated below.

9. Claims 15-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. As to claim 1, the prior art of record does not teach nor suggest the claimed method of buffer segment management on a disc drive, comprising (emphasis in bold):

wherein, for a read operation;

**determining if one or more buffer segments comprise the data for a read command; wherein, if the data is available then processing the data; wherein, if the data is not available then: determining if a current disc operation time is greater than or equal to one or more read time limits to transfer the data from a media to the one or more read buffer segments; if the disc operation time is greater than the one or more read time limits then aborting the read command; if the disc operation time is less than or equal to the one or more read time limits then reading the data;**

wherein, for a write operation;

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determining if the data storing size of one or more of the current write buffer segments is sufficient to store the data for a write command; **if the data storing size is sufficient to store the data then transferring the data; if the data storing size is not sufficient to store the data then; determining the data sizes of one or more write buffer segments minimizing the number of seek operations within one or more write time limits; wherein, if transferring the data from the one or more write buffer segments is within the one or more write time limits then transferring the data; and wherein, if transferring the data from the one or more write buffer segments is not within the one or more write time limits then aborting the write command.**

11. Claims 2-8 are also allowable for incorporating the limitations of claim 1, and further limitations.

12. As to claim 9, the prior art of record does not teach nor suggest the claimed method of buffer segment management on a disc drive, comprising (emphasis in bold):

wherein, for a read operation;

establishing the command time limits for reading at least two data streams into a read buffer segment; **determining the data rates for at least two read data streams to establish the time to read the data streams into the read buffer segment; determining the read buffer segment size for each data stream with respect to each data stream data rate; comparing the time required to read the at least two data streams into the read buffer segment with the time limits** wherein if the time required to read the at least two data streams into the read buffer segment exceeds the command time limit then aborting the read; wherein if

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the time required to read the at least two data streams into the read buffer segment does not exceed the command time limit then reading the data;

wherein for a write operation;

**determining the data rates for at least two write data streams; establishing the time limits for transferring data from the write buffer to a media; wherein if the write buffer space is less than the write buffer size required then flushing at least one write buffer segment to provide more write buffer segment space; wherein if after flushing the write buffer segment the space is less than the size required then; determining if the time limits will be exceeded; if the time limits will be exceeded then aborting the write operation; if the time limits will not be exceeded then transferring the data to the write buffer segments.**

13. Claims 10-13 are also allowable for incorporating the limitations of claim 9, and further limitations.

14. As to claim 15, the prior art of record does not teach nor suggest the claimed the program when executed by the processor means performs the steps of: determining if one or more buffer segments comprise the data for a read command; wherein, if the data is available then processing the data; wherein, if the data is not available then: **determining if a current disc operation time is greater than or about equal to one or more read time limits to transfer the data from a media to the one or more read buffer segments; if the disc operation time is greater than the one or more read time limits then aborting the read command; if the disc operation time is less than or about equal to the one or more read time limits then reading the data;**

wherein, for a write operation; **determining if the data storing size of one or more of the current write buffer segments is sufficient to store the data for a write command; If the**

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data storing size is sufficient to store the data then transferring the data; If the data storing size is not sufficient to store the data then; **determining the data sizes of one or more write buffer segments minimizing the number of seek operations within one or more write time limits; wherein, if transferring the data from the one or more write buffer segments is within the one or more write time limits then transferring the data; and wherein, if transferring the data from the one or more write buffer segments is not within the one or more write time limits then aborting the write command.**

15. Claims 16-20 are also allowable for incorporating the limitations of claim 15, and further limitations.

***Conclusion***

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.



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17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Than Nguyen whose telephone number is 571-272-4198. The examiner can normally be reached on 8am-3pm M-F.

18. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on (571)272-4201. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

19. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Than Nguyen  
Examiner  
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